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ABSTRACT

The Association of Amazonian Universities (UNAMAZ) was created in September 1987 and is involved in a collective effort to find ways to promote the Amazonian region's nonpredatory development, recognizing its limitations and taking into account its potential. With deforestation taking place at ever-increasing speed, it has become necessary to intensify scientific research using an interdisciplinary approach, with emphasis given to the interaction between natural and social sciences. UNAMAZ programs have focused on preparation and training of human resources for the elaboration and execution of integrated projects, environmental education, and development of an information system in science and technology. UNAMAZ has promoted a series of courses, workshops, seminars, and meetings on scientific and technologic policies, specialist preparation, agri-forestry management, mercury contamination control, and other topics. Participating institutions have reached a consensus about the need to implement new strategies for regional development, based on economic and ecological zoning and a scientific and technological policy to strengthen local universities and research centers. These strategies call for increased cooperation with international organizations and the governments of developed countries. (JDD)

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PARALLEL COMMISSION III

Tuesday, 7 August 1990, 9.00 – 12.30

The mission of the university in economic development and environmental preservation : management of local and regional resources in an interdependent world system

José Seixas Lourenço, President, UNAMAZ, Brazil

HE 023 966

UNAMAZ

THE MISSION OF THE AMAZONIAN UNIVERSITIES IN ECONOMIC DEVELOPMENT AND ENVIRONMENTAL PRESERVATION

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President of the
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Amazonian
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Helsinki
Augusto 1990

UNAMAZ

THE MISSION OF THE AMAZONIAN UNIVERSITIES IN ECONOMIC DEVELOPMENT AND ENVIRONMENTAL PRESERVATION

PRESENTATION

Thank you very much for the invitation to take part in this General Conference which marks the 40th anniversary of the International Association of Universities (IAU) and the 350th anniversary of this distinguished University of Helsinki.

On behalf of the Association of Amazonian Universities, we would like to greet the representatives of the IAU Member Institutions and of the national and international organizations concerned with higher education.

We are pleased to have this opportunity to talk about the mission of the Amazonian Universities in economic development and environmental preservation.

The Association of Amazonian Universities (UNAMAZ), that today congregates 34 Universities and Research Institutes of eight Amazonian countries (Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela) is indeed an interesting example of management of local and regional resources.

UNAMAZ is involved in a collective effort to find ways to promote the Region's non predatory development, recognizing its limitations and taking into account its potential, bearing in mind that the proper use of the Amazon Region depends to a great extent on education, science and technology.

I. INTRODUCTION

The Amazon River basin has an approximate area of seven million square kilometers. This basin englobes twenty percent of the planet's fresh water and is certainly the world's largest fluvial network. The tropical forest occupies an important part of this territory, with about five and half million square kilometers, sixty percent of which lies in Brazil, and the remaining area is distributed among Bolivia, Peru, Ecuador, Colombia, Venezuela, Guyana and Suriname.

Obviously, if one considers the extension of the Amazon forest, which is about half the size of Europe, one can have an idea about the potentialities of this Region in terms of renewable and non renewable natural resources. With such continental dimensions, the Amazon Region has an extraordinary variety in geology, soils, flora and fauna.

The geological potential has been confirmed, and several deposits are already under economic exploitation, like the iron ore in the huge mineral province of Carajas, the many gold washing sites ("garimpos"), the deposits of manganese, bauxite, cassiterite, copper, Kaolin and also fossil fuels.

The fundamental paradox of the Amazon Region lies in the association of exuberant vegetation covering and poor soils, largely inadequate for agriculture under current technical conditions. Attempts to introduce productive systems in agricultural and ranching or agroindustrial enterprises were realized without adequate knowledge of the Region's ecological characteristics and have, in general, ended in the undertaking's failure and the degradation of the environment.

As a matter of fact, until the decade of the 1960's, the Amazonian rainforest remained essentially intact, with a minimum of human interference. However, this situation changed drastically after 1970 with the colonization programs and road construction in several parts of the Region, followed by deforestation taking place at ever increasing speed.

As a result, national and international concern over the effects of this process has become rather intense, and a few financing agencies have cooperated in setting up a number of research programs to check the interaction between the forest cover and the atmosphere of the Amazon basin, and its influence on the rest of the World. In view of the magnitude of the problems, these efforts must be considered as a modest beginning and as an incentive for the continuation of research oriented to minimize the possible consequences.

From the national point of view, the problem is far more complex. The point is neither exclusively to avoid the emission of gases that contributes to the greenhouse effect, nor to preserve the genetic wealth of the tropical forest. Beyond that, it is necessary to find ways to utilize the Region's potential for national development, creating technology that permits the use of the environment without destroying it.

This also means that there is a strong necessity to intensify the scientific research in various fields of study but especially to have a multi and interdisciplinary approach with emphasis given to the interaction between natural and social sciences.

II. THE AMAZONIAN INTERUNIVERSITY COOPERATION

During the last fifteen years, various specialists and institutions interested in Amazonian topics conceived cooperation programs with the intention of contributing to the harmonious development of the Amazon Region and to the better use of its natural and human resources.

In 1978, the governments of Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela signed the Treaty for Amazonian Cooperation, intending to, among other goals, stimulate scientific, technological and cultural cooperation among the signatory countries.

The Treaty for Amazonian Cooperation, also know as Amazonian Pact, recognizes a direct connection between scientific and technological research and economic and social development.

Convinced that they should be major contributors to national and international efforts to promote the scientific and technological development of the Amazon Region, the Universities and research institutions of the Region participated in the First Scientific and Technological Meeting of the Amazonian Countries held in Belem, Brazil, in November, 1984. An important document resulted from this meeting: The Plan of Action in Science and Technology of the Amazonian Countries, approved in September, 1986 during a meeting of the Treaty, in the city of La Paz, Bolivia.

This document reflects the concerns of the participating countries in the Amazon Region, for training their human resources and stimulating scientific research. The Plan establishes the following five areas of action in the Region:

1. Scientific and Technological Information
2. Environment and Natural Resource Management
3. Human Populations
4. Health and Tropical Medicine
5. Appropriate Technologies

In response to these concerns a network of higher education institutions called "Association of Amazonian Universities (UNAMAZ)" was created in September 1987 with support from UNESCO, OAS, UNDP and other organizations, proposing to "approach common regional problems and seek solutions by means of cooperation, communication and systematic information, in their respective areas of influence" (Clause 1, of the Act of creation of UNAMAZ). Shortly thereafter the cultural dimension was added as an essential component of intercountry cooperation in harmony with the goals of the World Decade for Cultural Development (1988-1997), adopted by the General Assembly of UN in December, 1986.

The basic idea for the creation of UNAMAZ is to make the Association the center for a series of discussions and actions which allow the regional universities, collectively and in a multi-disciplinary manner, to have a critical evaluation of the current projects and also to provide alternativeswhich contribute to the solution of the great problems which affect Amazonian development on the whole.

The Central Commitee of UNAMAZ, with the technical assistance of UNESCO,ellaborated a Project for an Interuniversity Program for Amazonian Cooperation (PROGRAMAZ), which includes the following components:

A - Preparation and training of human resources for the ellaboration and execution of integrated projects, taking advantage of the training capacity of each country, which will offer the other Amazonian countries opportunities to participate in specialization courses, and master and doctoral programs;

B - Environmental education, in order to prepare specialized human resources to deal with environmental problems in the various areas, disciplines, sectors and levels pertinent to their solution;

C - Information system in science and technology of the Amazon, which consists of a cooperative network connecting the national data bases of the Amazonian countries; initially, two data bases are being established: the referential base (register of research, institutions and human resources) and the bibliographical base.

With the technical and financial support of the OAS and UNESCO, the Association of Amazonian Universities has promoted, during the last two years a series of courses, workshops, seminars and meetings, as follows:

1. Courses

1.1 "International Courses for Preparing Specialists in the Development of Amazonian Areas", held from August to December, in 1988 and 1989, at the University of Para, Belem, Brazil, with scholarships granted by the United Nations University;

1.2 "The First International Course on Scientific and Tecnologic Policies for the Amazon", held in the second semester of 1989, at the University of Para.

2. International Seminars

2.1 "Information and Documentation of the Amazon", held in October, 1988, at the National University of the Peruvian Amazon, in Iquitos, Peru;

2.2 "Human Population and Amazonian Development", held in November 1988, at the University of the Amazonia, Florencia, Colombia;

2.3 "The Children of the Amazon" with the support of UNICEF, held in June 1989, in Belem, Brazil;

2.4 "Mercury Contamination Control in the Amazon: New Technologies and Environmental Education"; and

2.5 "Environmental Legislation in the Amazon", were both held in Belém, in December, 1989.

3. Workshops

3.1 "Agro-forestry Management", held last June at the University "Gabriel René Moreno", in Santa Cruz de la Sierra, Bolivia;

3.2 "Non-metalic Minerals for Ceramics, Cement and Refractories", held last July at the University of Para, Brazil.

Along this semester a few more workshops will be held in Suriname, Guyana, Venezuela and Ecuador.

All the papers and recommendations presented at the meetings, as well as the selected monographs coming out of the post-graduate courses are published in the "Amazonian Cooperation Series". Five books have already been produced and five more are being edited by UNAMAZ.

Most of the events already mentioned were attended not only by professionals from the Universities and Research Institutes, but also by individuals engaged in enviromental affairs and by people who formulate policies and make decisions on development projects.

The Association of Amazonian Universities, as a non governmental organization,is taking a very considerable role at national, regional and international level, not only as promoter of ideas and concerns but also as an efficient performer of actions which in the recent past were exclusively in governmental hands.

The trends are to an increased activity, using the joint capacity of our institutions to broaden, consolidate and diversify the projects, considering research as an indispensable element of the interuniversity cooperation program in order to achieve a desirable scenario.

III. CONCLUSIONS

There are many possible answers and strategies to face the challenge of harmonizing development and environment.

The potential of renewable and nonrenewable natural resources in the Amazon area is very large indeed. However, the exploitation of these resources are coupled with potentially very serious ecological hazards, so that a very careful planning of the process, and a much higher level of governmental and private investments in environment protection and research should be made.

The countries' development certainly demands searching for alternative forms of occupation and utilization of the Amazon, without environmental degradation. Of course, traditional forms of environmental exploitation combining small scale subsistence agriculture, the gathering of forest products, hunting and fishing should not be eliminated, as they represent a valid alternative for important sectors of the populations, especially if future research helps increase the productivity of these economic activities. But it is necessary, at the same time, to develop modern technology adequate for medium and large businesses which permits self-sustained exploitation of natural resources.

Based on a sustained and balanced socio-economic development, with a selected and technologically adequate exploitation of the natural resources the Amazon Region can, in the near future, assume a lead position in the production of goods with a high technological content, and can become an important center (or complex) for research and technological development on biotechnology, pharmacology, chemistry of natural products, materials science, forestry management and tropical agriculture.

Today there is a consesus, within our institutions, about the need to alter the pattern of settlement of the Amazon basin and to implement new strategies for the regional development, based on:

a) an economic and ecological zoning which implies acknowledging the Amazon's forest vocations, the importance of utilizing its hydroelectric and mining potential, the possibility of agricultural development in the most fertile lands, allowing for economic activities in all of these areas, but in a way that prevents the indiscriminate destruction of resources; the technique of zoning consists basically of grouping, in territorial units, areas whose characteristics are relatively homogeneous in terms of potential and limitations for use of natural resources;

b) a scientific and technological policy which should attract more investments for the Region, in order to strengthen and to expand the local Universities and research centers, and to implement new graduate and post-graduate programs ; for preparing and training of high level professionals in those subjects considered of main interest for the environmental preservation and regional development.

In order to better perform this new policy the Amazonian institutions need also to count with important allies from outside the Region, such as:

1. the governments of Developed Countries, since they are already sensitive to the importance of the Amazonian ecosystem to the World, and can greatly cooperate with technical-scientific programs;

2. the Organization of American States, the different United Nations organizations (such as UNESCO, UNDP, FAO, UNICEF, UNEP) and the European Economic Community because they are essential to foster education, environment, science and technology programs (OAS, UNESCO and UNICEF have been giving and continue to give indispensable technical and financial support to UNAMAZ activities);

3. the international financing institutions, especially the World Bank and the Inter-American Development Bank (IDB), whose priority regarding financial aid to the Amazon Region has been oriented to the environment preservation, should also grant financial resources to scientific and technological development programs;

4. the international institutions for environment preservation which mobilize financial resources and have conditions to offer support to eco-development projects in the Amazon Region;

5. the Universities and Research Centers that are better structured and have a significant scientific and technological production of interest to the Amazon may become important partners on technical cooperation projects, technology transfer and joint research which should improve the research capacity in the Region.

In closing, we should emphasize that it is absolutely necessary to organize constructive political pressure in order to promote a self-sustaining development of our countries. In this interdependent world system, all countries, developed and developing, share this same fragile earth and should also share the responsability for passing on to future generations a sustainable environment, diverse in its flora and fauna, rich in its variety of germoplasm, complete in its species, efficient in its use of resources, and effective in its preservation of humanity.